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DIPLOMA IN INFORMATION TECHNOLOGY
(DIGITAL TECHNOLOGY)

TECHNICAL REPORT
PROJECT MANAGEMENT SYSTEM (WEB – BASED APPLICATION)

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SESSION : SESSION 2 2022/2023

DECLARATION

We hereby declare that the technical report entitled "Project Management System" (Web Based Application) is based on original work under supervision and guidance of PN ROHANA BT MD.YUSOF except for citations and quotations which have beenduly acknowledged. We also declare that it has not been previously and concurrently submitted for any other diploma or award at Polytechnic or other institutions.

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APPROVAL FOR SUBMISSION

Project Title   : PROJECT MANAGEMENT SYSTEM (WEB-BASED APPLICATION)

Session   : SESSION 2 2022/2023

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ABSTRACT

Nama laman web ini ialah Sistem Pengurusan Projek. Tujuan projek ini dibangunkan kepada Engeo Lab SDN.BHD adalah untuk mengatur projek pekerja dan dokumentasi pentadbir. Masalah pertama yang dihadapi oleh Engeo Lab ialah, syarikat menghantar projek, lokasi dan laporan mereka melalui Whatsapp. Kedua, selepas menyiapkan projek pekerja, pemilik syarikat akan memadam gambar dan laporan projek lama yang telah mereka siapkan daripada sistem mereka. Kadangkala, pelanggan akan meminta laporan dan gambar dan ini menimbulkan masalah antara kedua-dua pelanggan dan pemilik. Objektif sistem pengurusan projek ini akan membantu Engeo Lab dengan mencapai objektif berikut, untuk membangunkan aplikasi berasaskan web pada sistem pengurusan projek, untuk melindungi data daripada bahaya fizikal dan capaian yang tidak dibenarkan dan untuk meningkatkan kualiti dan ketekalan maklumat. Kaedah yang kami gunakan dalam laman web ini ialah metodologi. Kaedah ini menjadikan kemajuan kami untuk menyelesaikan lebih mudah.

This website name is Project Management System. The purpose of this project is developed to Engeo Lab SDN.BHD is to organize employee's project and admin's documentation. The first problem faced by Engeo Lab is, the company send their projects, location and reports through Whatsapp. Secondly, after completing the employees project, the owner of the company will delete the picture and reports of the old project that they have completed from their system. Sometimes, clients will ask for the reports and picture and this raises a problem between both client and the owner. The objective of this project management system will help Engeo Lab by achieving the following objectives, to develop web based application on project management system, to protect the data from physical harm and unauthorized access and to improve the quality and consistency of information. The method that we used in this website is methodology. This method make our progress to finish easier.

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1.0 PROJECT PLAN

1.1 <u>INTRODUCTION</u>

In today's fast paced world, organizations that practice project management have a competitive advantage over the others due to competition becoming more time and cost based. If company can provide a product to the market faster and cheaper, then it has an edge on competition. Better project management is a smart way to work and survive in the competitive business world.*(Lewis 2007; Taylor 2004).*

This final year project is conducted to build a web-based project management system for EngeoLab Sdn.Bhd to manage their team and project. A project management system is a mean of managing a project by planning, organizing, and managing the company's different required aspects.

Project management system (PMS) is a way to manage an organization to complete a task or a project.Most organization uses general software applications such as Excel and Whatsapp to organise their work flow. In conclusion, this project is created to help EngeoLab to organize their workflow.

1.2 <u>PROBLEM STATEMENT</u>

The first problem faced by Engeo Lab is, the company send their projects, location and reports through Whatsapp.

Secondly, after completing the employees project, the owner of the company will delete the picture and reports of the old project that they have completed from their system. Sometimes, clients will ask for the reports and picture and this raises a problem between both client and the owner.

Thirdly, it is difficult for the employee and admin who are using gadgets with different type of OS such as Android and iOS.

1.3 <u>OBJECTIVES</u>
The objective of this project management system will help EngeoLab by achieving the following objectives:

i. To develop web based application on project management system. ii.
To protect the data from physical harm and unauthorized access. iii.
To improve the quality and consistency of information.

1.4 <u>SCOPE</u>

The scope of this project is to develop and also assist Engeo Lab Company to organize employees time and work by creating a website for our client's company.

This company have a lot of unorganized work and time, so that here are two type of scope which known as User Scope and System Scope:

1.4.1 <u>SYSTEM SCOPE</u>

This system also will be develop by using different types of programming language and scripting language. For example HTML, CSS, Javascript, PhP, Xampp and also Visual Studio Code.

1.4.2 <u>USER SCOPE</u>

Employees:
This web-based Work Management System helps to organize schedule for the Engeo Lab Company's employees. The employees also won't be confuse and they will be start and also finish their work on time.

Admin:
Admin can be able to collect the data from the employees and store in the database. Admin also can add on the employees task in the system when the work have to be needed to do.

1.5 <u>LITERATURE REVIEW</u>

<u>Project Management System</u>

Modern project management first came into existence in the early 1950s on large defence projects. After World War II, the increasing complexity of projects and a diminishing wartime labour force demanded new organisational structures. The Program Evaluation and Review Technique (PERT) charts and Critical Path Method (CPM) were pioneered allowing managers greater control over heavily engineered and highly complex projects Matheu, 2005).

These techniques spread, initially to larger companies, as business leaders sought new management strategies. However, after viewing the success of these operations, smaller organisations gradually took to adopting the strategies and now a very high majority of

construction firm worldwide implement some form of project management (Alshawi & Ingirige, 2003). These days, projects are generally far more complicated involving large capital investments, combining several disciplines, project members who are widely dispersed, tighter schedules, and rigorous quality standards. These factors together with the rapid developments in Information and Communication Technology (ICT) have offered project management practitioners the opportunity to take advantage of newly developed management tools and the latest technology, such as Web-based project management systems (WPMSs) (Alshawi & Ingirige, 2003).

According to Ahuja (et al., 2009) project management requires a system that,

"provides shared project information, analysis of tools to analyse the information, a collaborative infrastructure to handle the flow of information, a multi-device access to the pertaining information and a system that ensures the persistence of the underlying information among the participants". ICT tools and systems have the ability to provide these services (Ahuja et al., 2009).

1) *Communication*

According to the Royal Institute of British Architects (as cited in Matheu, 2005), "The overall role of project management….is to harmonise the functions of planning, communicating, monitoring and control in order to meet the project's overall objectives as defined by the scope, time, cost, quality and client satisfaction".

Communication deals with the producing, issuing and transmitting reports/documents, and chairing meetings with key project participants in order to ensure the proposed timing, method and strategy is made available and understood. Matheu (2005) writes that, In essence, collaboration of various participants in a project is measured by how effectively the communication channels were managed".

Therefore, as conveyed by Matheu (2005), "The responsibilities of the Project Management are to plan, coordinate and control the overall project". Such duties can be achieved through a good communication and information management tool, such as a Web-based project management system (WPMS).

There is a growing body of literature delineating the advantages/benefits of using WPMSs on construction projects.

2) *Improved data/information/document availability*

This benefit derives from the fact that the technology allows the users to "reach and search the project information globally" and thus able to work from anywhere worldwide (Becerik and Pollalis, 2006).

Becerik and Pollalis' (2006) research states that, "The technology ensures and forces data population and provides a structured and easy way to store it". Assistance in searching for files and documents is ranked 4th in Nitithamyong & Skibniewski's (2007) study of WPMSs success factors, which corroborates the above findings. Cox (2007) also corroborates with the above commenting that, "by having a central portal of the most up-todate project information for all participants provides the opportunity to access whatever is needed to perform individual project responsibilities". Cox (2007) also comments that project participants can access archived historical data through these systems which allows the users to understand project issues as they arise and are resolved.

3) Faster reporting and feedback

Becerik and Pollalis (2006) suggest project teams can manage complex programs with less administration staff and can communicate with greater effectiveness when using a WPMS. In contrast to this, O'Brien (2000) argues that it should be recognised that these systems are "not necessarily labour-saving devices for all individuals on a project team".

Ilich, Becerik, and Aultman (2006) suggest that WPMSs increase the speed of communication on a project which is corroborated by Alshawi & Ingirige (2003) who comment that such systems improve efficiency through "speedy and accurate information between head office and sites". The study by Matheu (2005) also suggests WPMSs create a reduction of the response time for RFIs (Requests for Information), COs (change Orders) and specifications clarification. Nitithamyong & Skibniewski's (2007) study ranks "enabling immediate report and feedback" 5th from all WPMS benefits.

1.6 **METHODOLOGY**

In our web-based Work Management System for Engeo Lab Company we use the Agile Model Methodology. Besides, Agile Model is a people-focused, result-focused approach to software development that respects our rapidly changing world. The purpose of using this Model is to centered around adaptive planning, self-organization, and short delivery times. In addition, It's also flexible, fast and aims for continuous improvements in quality. Meanwhile this model abandons the risk of spending months or years on a process that ultimately fails because of some mistake in an early phase. It also relies instead on trusting team members to work directly with our "Engeo Lab Company's" client to understand the goals and provide solutions in a fast and incremental way. Every iteration involves cross functional teams working simultaneously on various areas like planning, requirements analysis, design, coding, unit testing and acceptance testing.
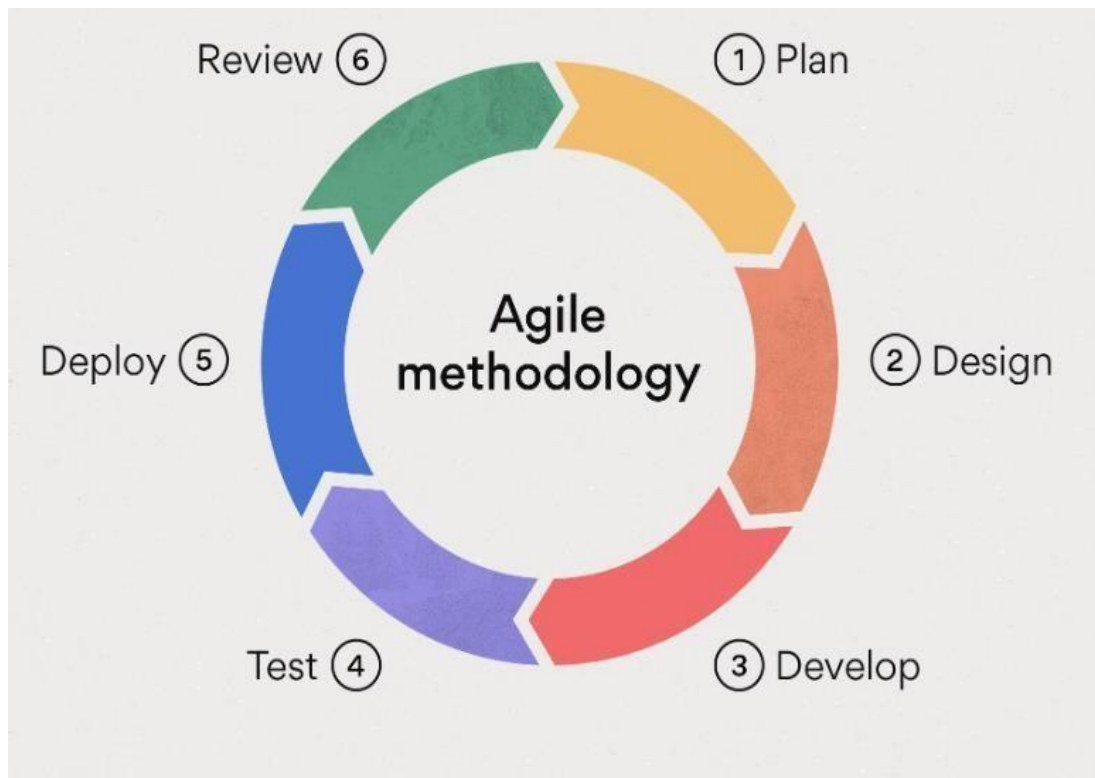
Plan

We had a plan and we need to show it to our supervisor and see what the supervisor thiks of our idea . the first step we did was we created a proposal that contains the main highlights and important infos about our project . we also meet with our supervisor to share our ideas and to also add some of the ideas given by our supervisor .

Design

We searched for various apps to create are prototype , the app that was suitable to create our project was Figma .This is because Figma is a great platform to create a prototype and to visualise how the web application should look like

Develop

We developing our website and system by using HTML,CSS,JAVASCRIPT ,PHP and VS CODE .HTML,CSS AND JAVASCRIPT will be our front end while PHP and MYSQL will be our backend to build this project.
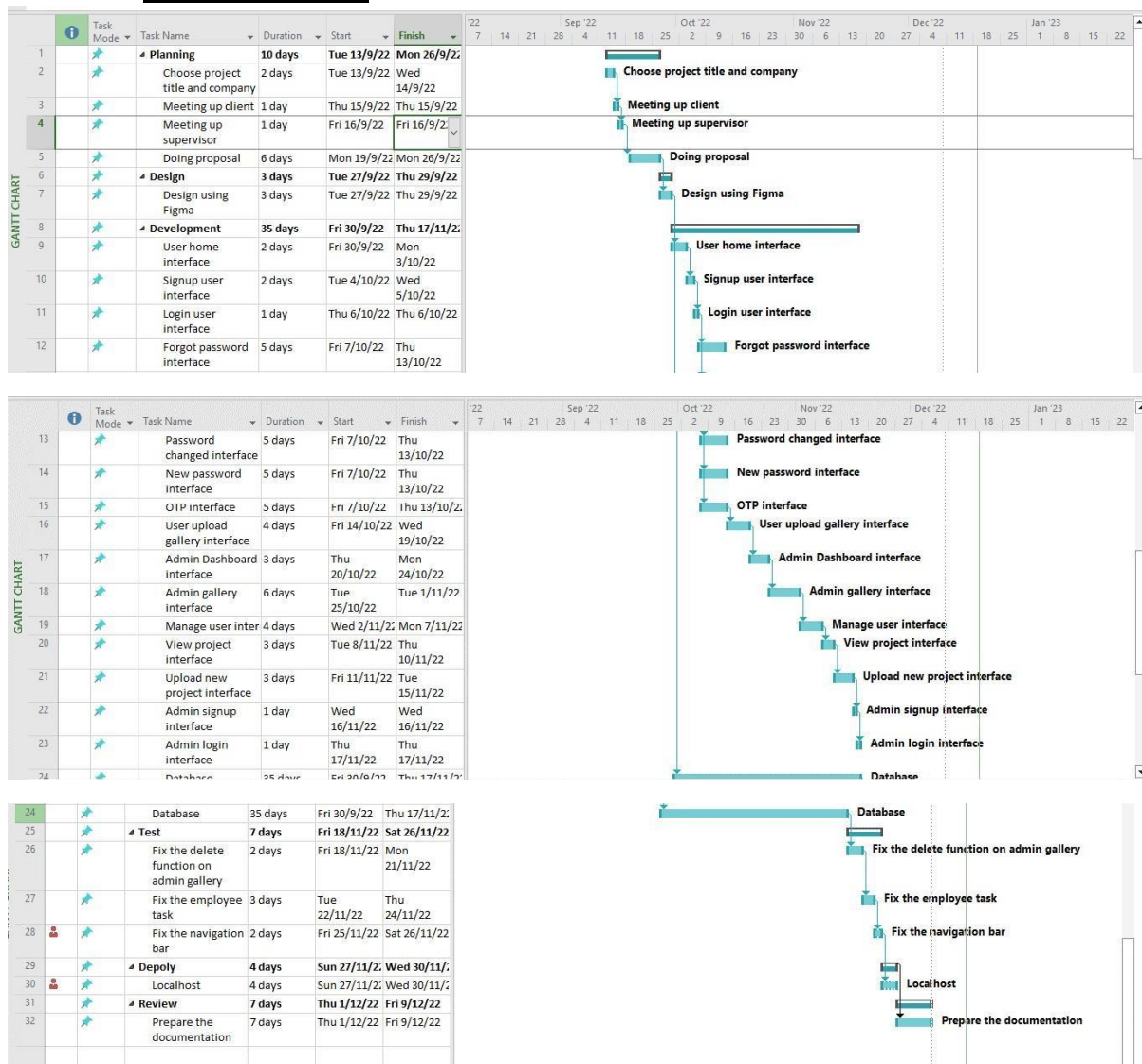
Test

We testing the system to make sure there's no bugs, errors and exception handling and we corrected any error and bugs that came during our test phase .

Deploy

We run and Launched our Website through local hosting.

1.7 GANTT CHART

2.0 Requirement Specification

2.1 Functional Requirement

Upload Files.

Employee able to upload image inside the database

Selecting Workers

Admin able to select particular user for a specific task and other user are unable to view it

Manages users

Admin able to add and delete user from the admin dashboard

Display the image at Gallery.

User and admin are able to see the image that they send and admin able to delete the images sent by the user **Set Projects.**

Admin able to set project from the admin dashboard and able to put location

2.2 Non-Functional Requirement

Requirement	Product
Performance	Website will load less than 1 sec from one webpage to another webpage.
Availability	The website will always be accessible 24/7 by admin and user.
Security	Admin able to view the number of user logged in and able to select specific user for a specific task
Capacity	Admin able to set as many project without any limit
Usability	Admin are able to set a task and user able to view task that has been set.

2.3 Hardware and Software Requirement

Hardware/Software Requirement	Description
1) Laptop	The laptops of ours were the main hardware role to develop or Project Management System Web-Application.
2) Visual Studio Code (VS Code)	VS Code is one of the software where we used HTML, CSS, Javascript and PHP language to write our code.
3) Xampp	Xampp were used to store all our database and also run our website through localhost.

2.4 System Configuration

XAMMP Control Panel
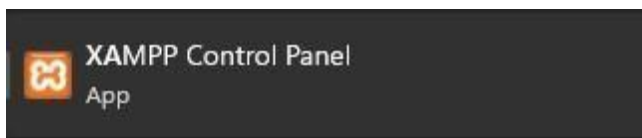
1) Go to URL : https://www.apachefriends.org/download.html
   - Please idenify your current platform and version of your operating system
   - Download according to your platform and version that suitable with your computer.
   - The screen below will appear when your type above url in your browser

2) Setup -XAMPP

- Just click the installer of xampp and install it.
- The screen below will appear in your screen that show the process of installation already start.
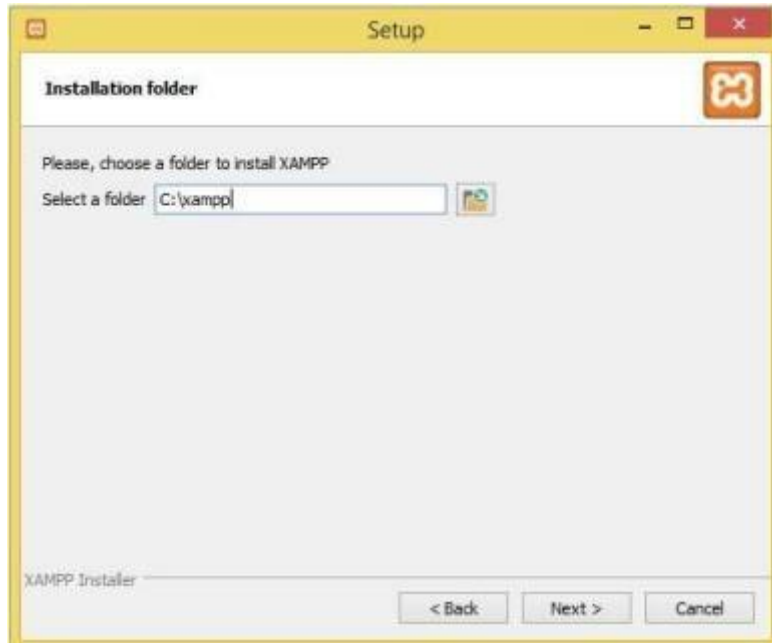- Click Next to proceed

3) Select Components
   - Please tick all the components in order to make sure process of installation did not fail.
   - But if you very understand about the component very well, you are be able to select the component that really need in your computer. Instead of install all the components. C
   - lick Next to proceed
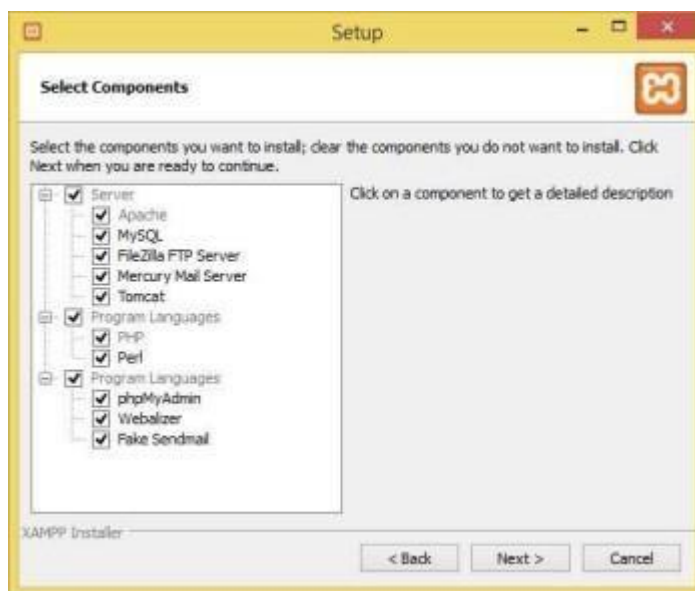
4) Installation Folder
   - Please choose directory to install the XAMPP
   - Best practise install on C:\xampp
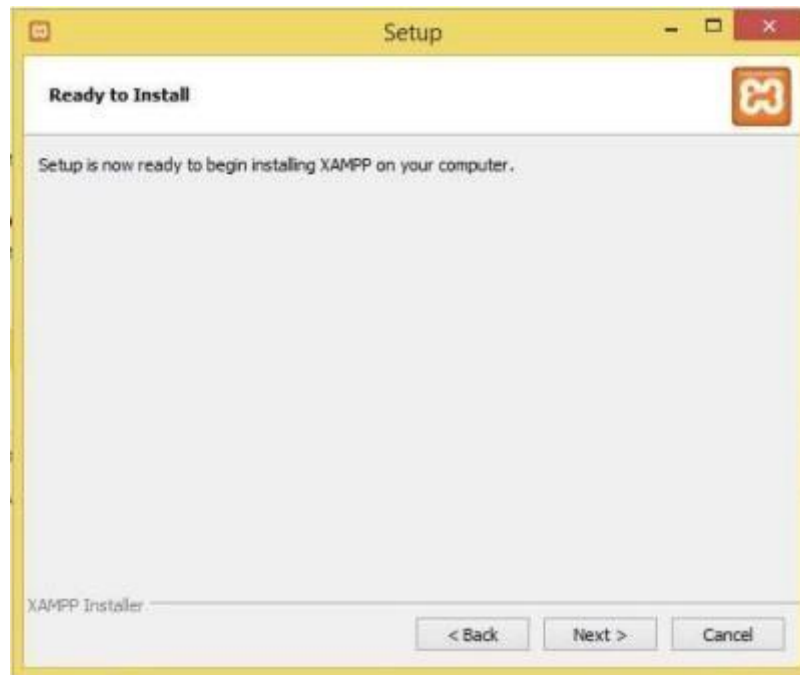   - Click Next to proceed

5) Installation Start
   • Click Next to proceed process of installation

6) Process Installation ready to start
   • Just Click Next to start the installation

7) Setup - Xampp
- Wait until the process of installation done.
- Click Next after the process done.

8) Complete the installation
- Just click finish button to finish the installation

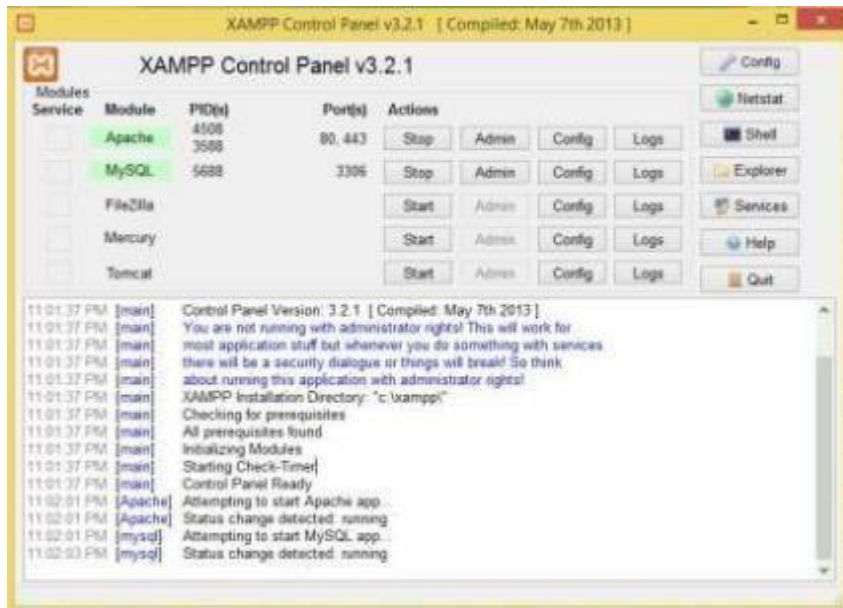9) After the installation done

- Click the icon in tray at the corner of your desktop screen • Click the xampp icon to run the xampp
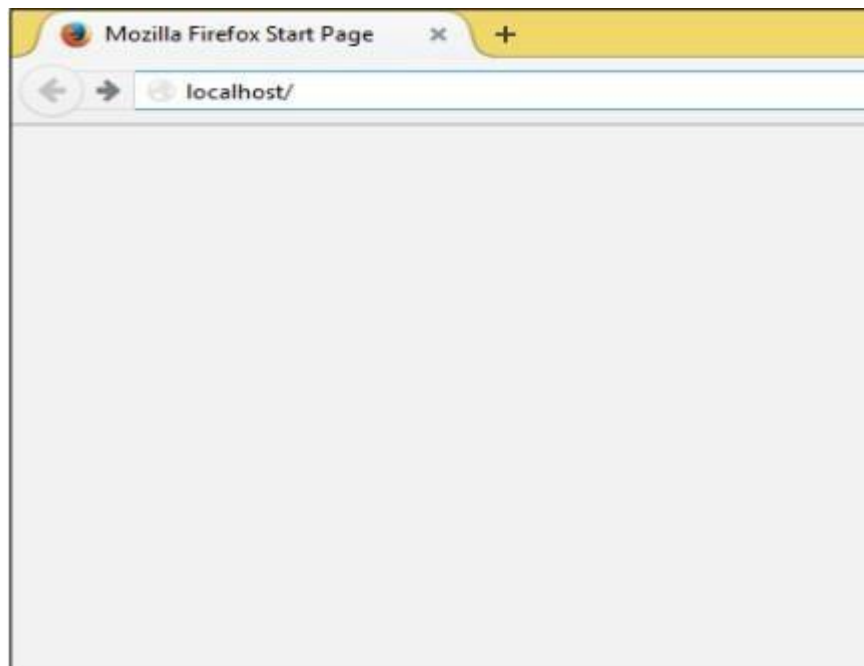

10) Xampp Control

- Click button Start in module Apache and Mysql
- The screen below will appear in your screen that show the both module already started

11) Open your Browser
- Just type in URL : localhost/
- Press enter

12) Succesful installation of XAMPP
- When below screen appear in your browser, it show that the XAMPP software already install succesfully in your computer.
- Click English as a preferred languange in your xampp.

13) Xampp Screen
- When the below screen appear in your computer, you can check all the information about your xampp such as version and php version that support in this xampp.
- It is just an information. No need to change any setting in this page.

14) Open new tab in your browser
- Type in URL : localhost/phpmyadmin • Below screen will appear in your computer.
- This GUI use as a interface to link wih database MYSQL that already install in earlier of installation.
- So use this phpmyadmin to setup your database.
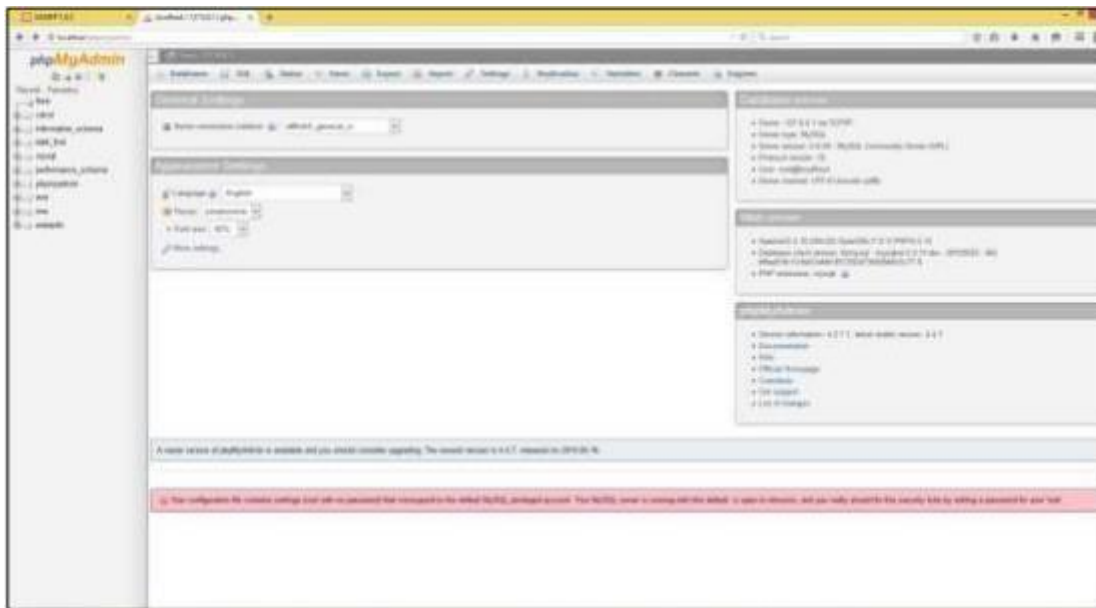
15) Process installation and setup done.

2.5 Security Requirement / Exceptional Handling

A security requirement is a statement of needed security functionality that ensures one of many different security properties of software is being satisfied. Security requirement include those that deal with data integrity, authentication, erroneous password lockouts, and access control.

In our Project Management System, Admin and Employee of Engeo Lab Company required an authorised username and password to login and access to Admin or Employee page. A warning stating "Login Failed" will appear if the user enters the erroneous username or password, preventing them from accessing to admin or employee page.

We also enabled password encryption for our project in database server. Which means when an employee create an account the server will scrambles the password so it's unreadable. This way we can prevent from third party to access to our system.
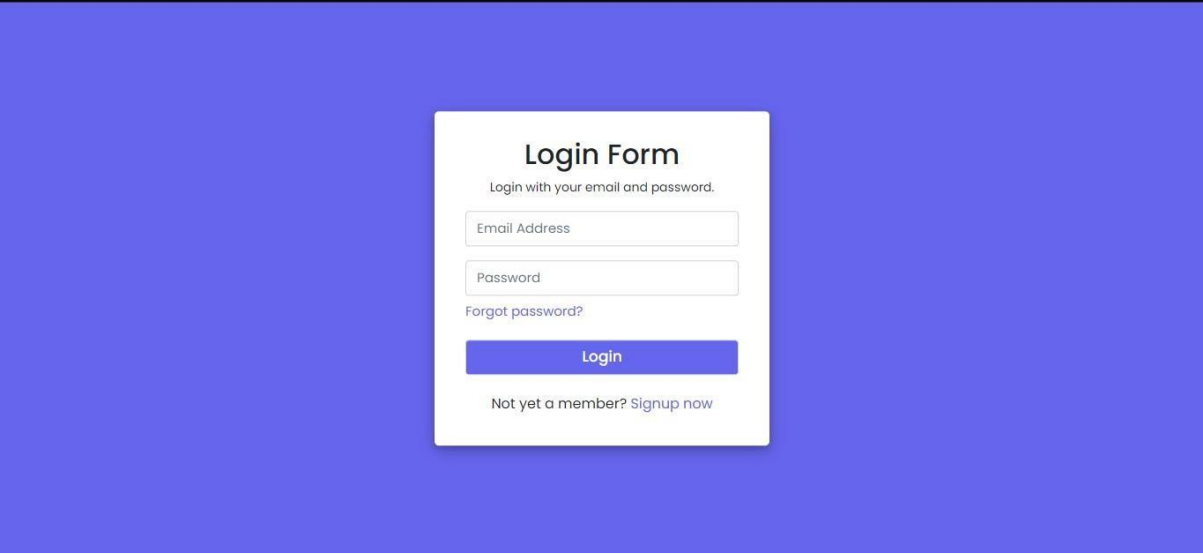
3.0 Final Design

3.1 Logic Design

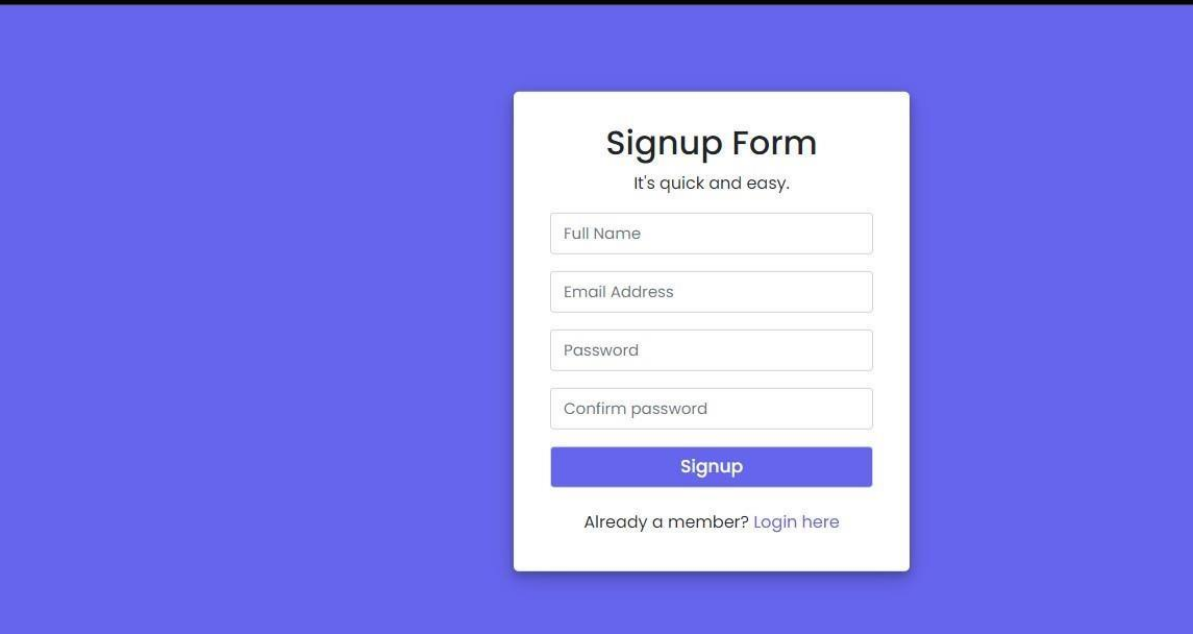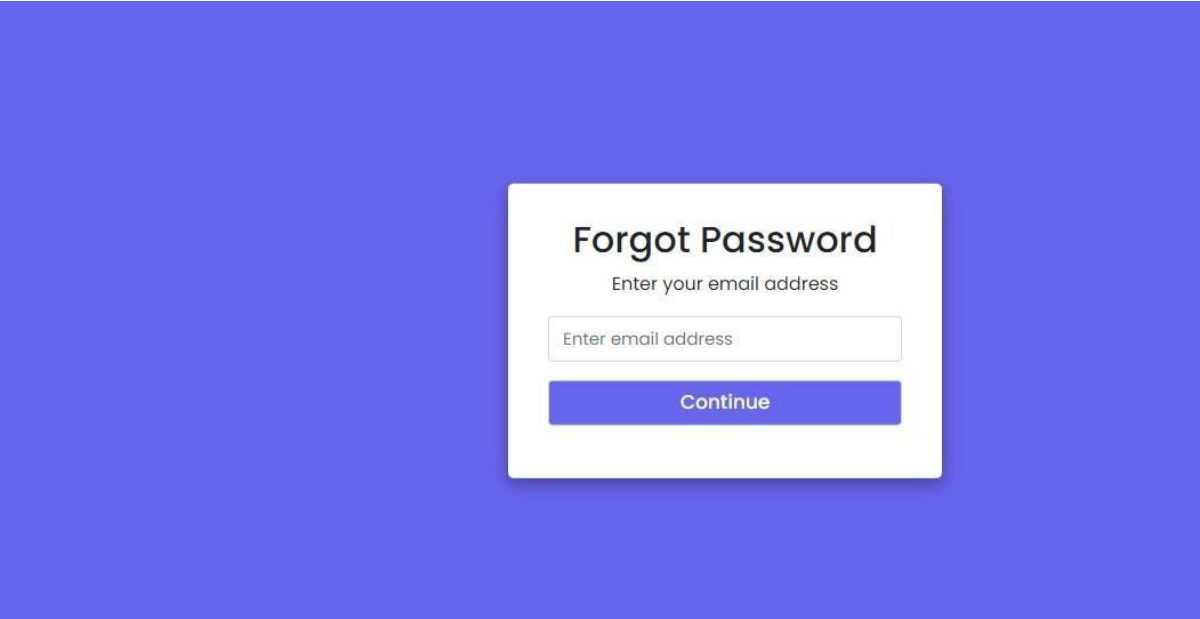**Figure 3.1.1 ERD Diagram for Project Management System**
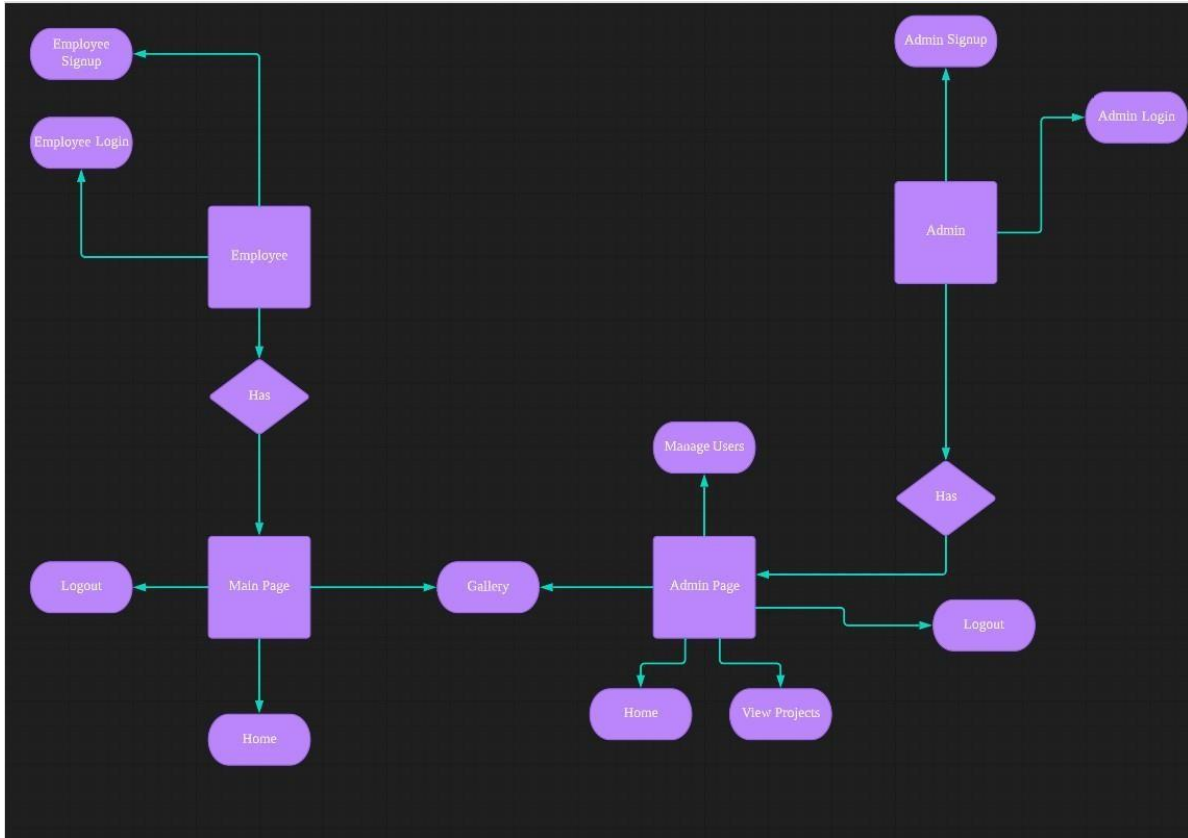
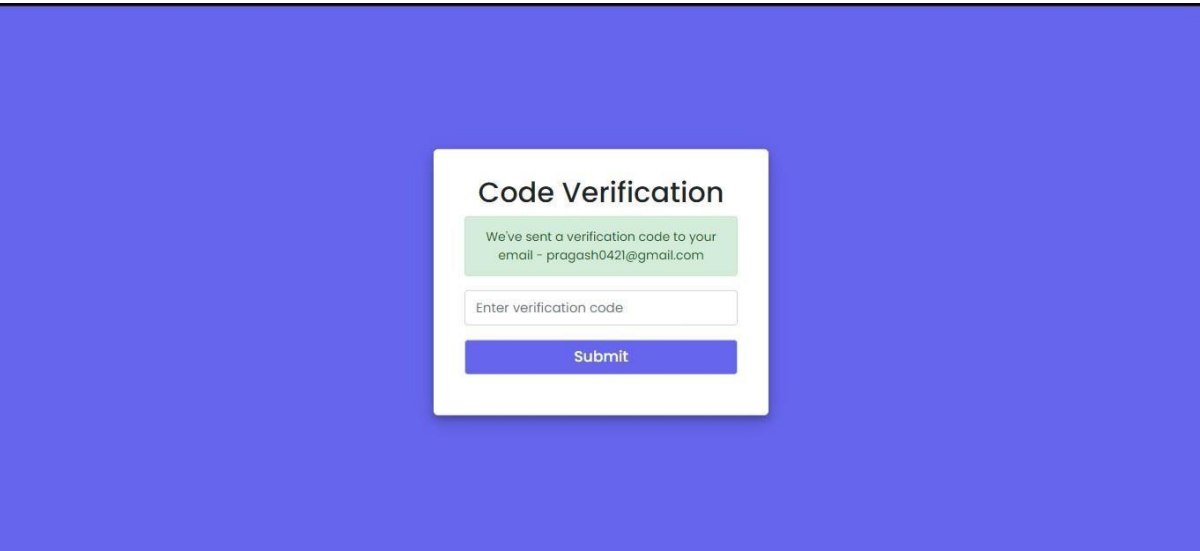## 3.2Physical Design

3.2.1 Login Interface
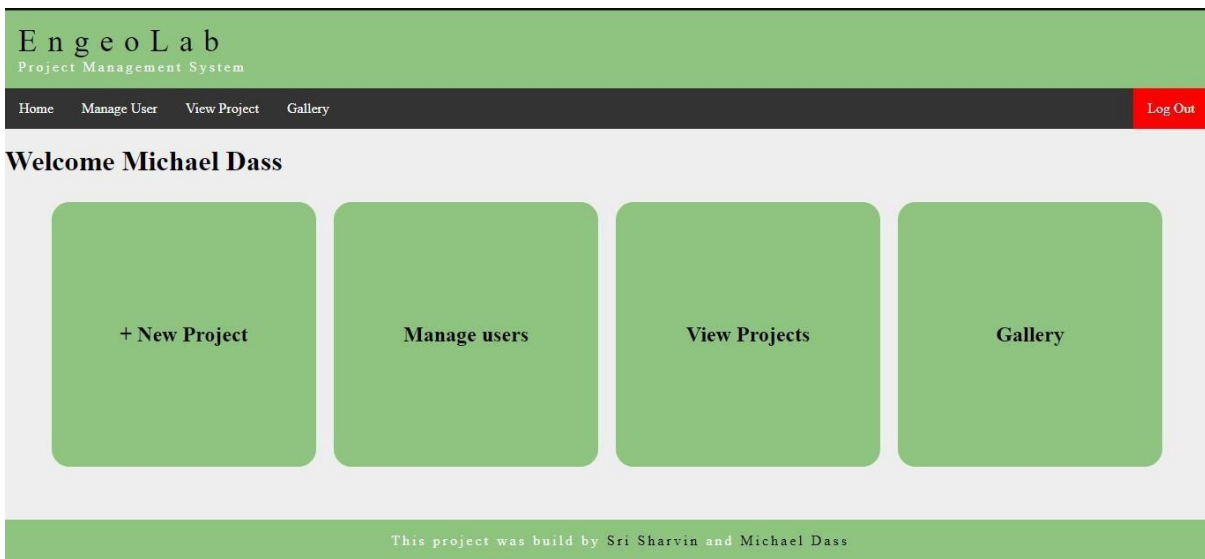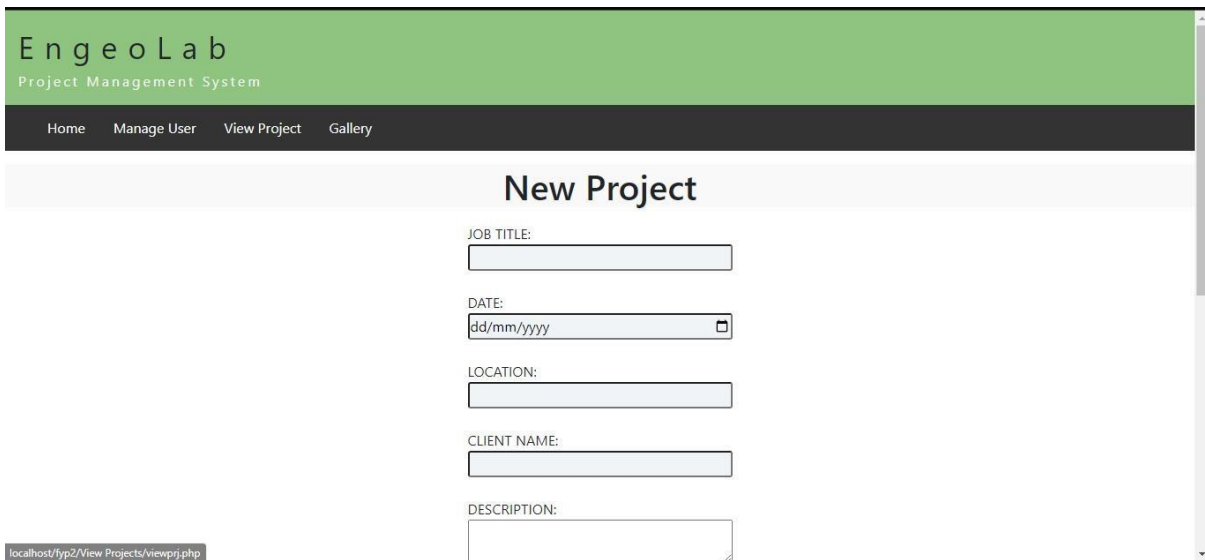

3.2.2 Sign Up now Interface

3.2.3 Forget Password

3.2.4 Code Verification Password

3.2.5 Admin Interface

3.2.6 New project interface

3.2.7 Manage User Interface

3.2.8 Add New user Interface

3.2.9 View Project Interface
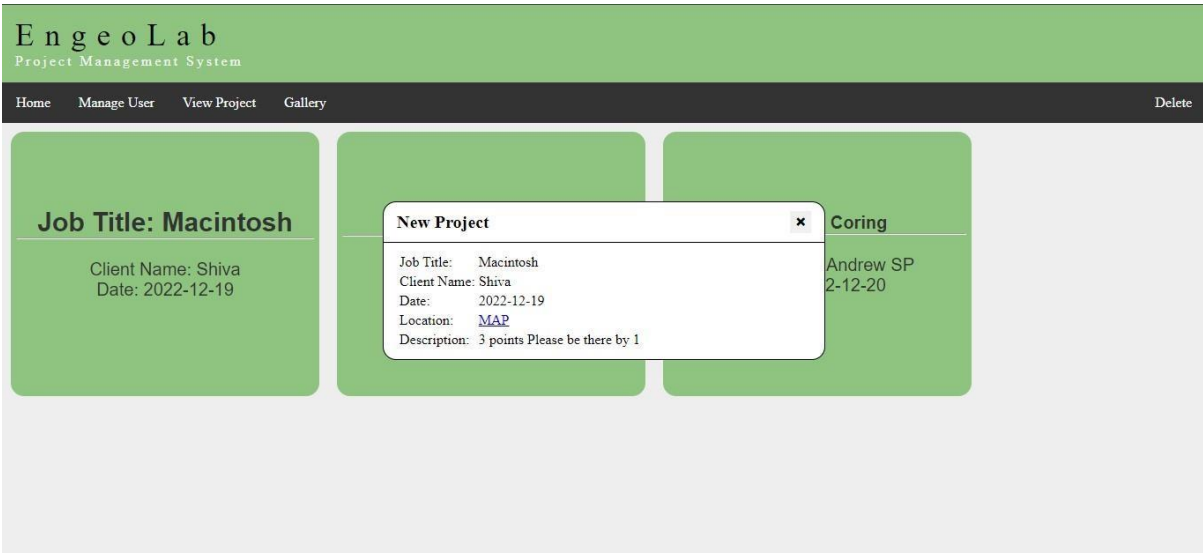
3.2.10 Delete Project Interface

ID	TITLE	LOCATION	CLIENT NAME	DESCRIPTION	DATE	EMPLOYEE1	EMPLOYEE2	EMPLOYEE3	EMPLOYEE4
29	Macintosh	https://goo.gl/maps/io2VTKLB48mgLiWv6	Shiva	3 points Please be there by 1	2022-12-19	Sri Sharvin			
30	FDT	https://goo.gl/maps/gYRi9RC6qBc2pRFaA	JKR	3 Points Please be there by 4pm	2022-12-20	Sri Sharvin			
31	Coring	https://goo.gl/maps/gYRi9RC6qBc2pRFaA	Andrew SP	9.30 am rock sample	2022-12-20	Sri Sharvin			

3.2.11 Gallery Interface

Gallery

ID	DATE	JOB TITLE	DESCRIPTION	IMAGE
87	2022-12-20	assad	as	

3.2.12 User interface

3.2.13 View Project Interface

3.2.14 Image Submission Interface

3.2.15 Gallery Interface

4.0 Test Description and Results

4.1 Unit Testing Plan

Table 4.1.1 Unit Testing Plan (Employee's interface)

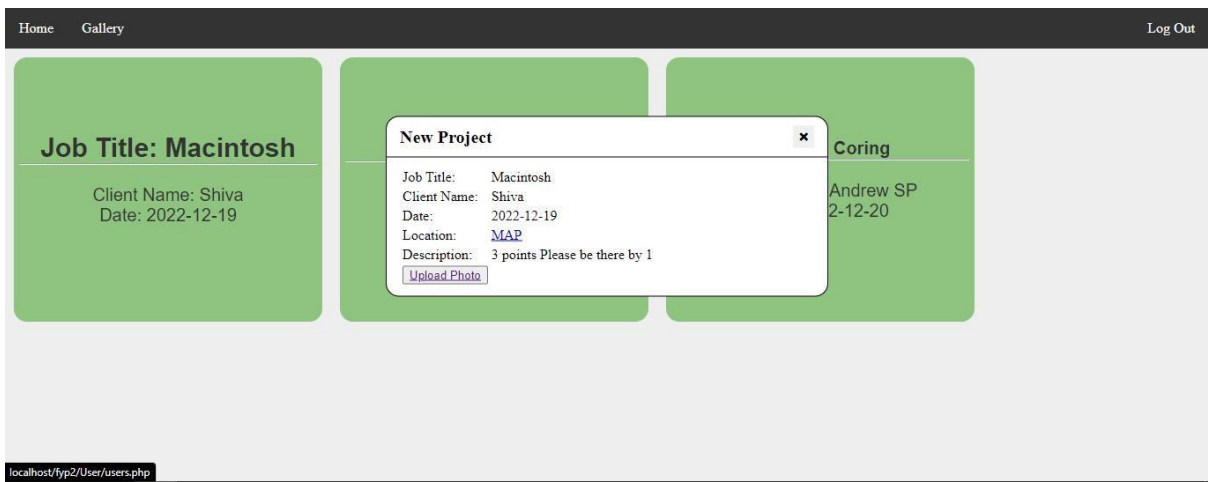| UNIT TESTING PLAN (UTP) (EMPLOYEE INTERFACE)						
No.	Test Case Name	Test Procedure	Precondition	Expected Result	Tester	Result (Pass/Failure)
1.	Employee Signup	Employee is required to fill first name, last name, phone number, username, password and confirm password.	Employee make sure both password and confirm password are same	Successfully signup.	Sri Sharvin	Pass
2.	Employee Login	Employee is required to fill the username and password field before access the website.	Employee need to sign up before login.	Successfully login and will navigate to Home interface	Sri Sharvin	Pass
3.	File Upload	Employee have to upload their image and report	Employee need to submit image in jpeg or png and report in word.docx or pdf	The Files will successfully updated to Gallery	Michael Dass	Pass
4.	Gallery	It will display the files at Gallery Interface	Employee have to submit the files	Employee can view their uploaded files in gallery interface	Michael Dass	Pass

No.						
5.	Logout	Employee also can click the logout button to exit from the interface	To exit the website employee have to click the logout button	It will successfully logout and navigate to the login interface	Sri Sharvin	Pass

Table 4.1.2 Unit Testing Plan (Administration's interface)

UNIT TESTING PLAN (UTP) (ADMINISTRATION'S INTERFACE)						
No.	**Test Case Name**	**Test Procedure**	**Precondition**	**Expected Result**	**Tester**	**Result (Pass/Failure)**
1.	Admin Signup	Admin is required to fill the username, password and confirm password	Admin make sure both password and confirm password are same	Successfully signup	Sri Sharvin	Pass
2.	Admin Login	Admin is required to enter username and password.	Need to sign up before login for new admin.	Successfully login will navigate to admin page	Sri Sharvin	Pass
3.	Add Project	Admin can Add the project name, date, location and also employee's points.	Admin have to click on Add Project button for the employee's task.	Will display a form to add projects for employees	Michael Dass	Pass
4.	Manage Users	Admin can Add, Update and Delete Employees	Admin have to click on Add, Update and Delete to manage the Users	The Employee's information will be added updated and also deleted	Michael Dass	Pass

| 5. | Gallery | Admin can view employee's project results | After employee upload the files, admin can save the files | The files will be successfully downloaded | Michael Dass | Pass |
| 6. | Logout | Admin also can click the logout button to exit from the interface | To exit the website employee Have to click the logout button | It will successfully logout and navigate to the login interface | Sri Sharvin | Pass |

4.2 Integration Testing Plan

Table 4.2.1 Integration Testing Plan (Employee's interface)

<table>
<tr><th colspan="7">INTEGRATION TESTING PLAN (ITP)
(EMPLOYEE'S INTERFACE)</th></tr>
<tr><th>No.</th><th>Test Case Name</th><th>Test Procedure</th><th>Precondition</th><th>Expected Result</th><th>Tester</th><th>Result (Pass/Failure)</th></tr>
<tr><td>1.</td><td>Employee Signup</td><td>Employee are required to sign up</td><td>Employee eed to sign up in order to login to website</td><td>Employee username and password from user signup are used for user login</td><td>Sri Sharvin</td><td>Pass</td></tr>
<tr><td>2.</td><td>Forget Password</td><td>Employee have to click on forget password on user login</td><td>Employee need to enter the OTP number which will sent to employee's email, then enter the new password</td><td>Employee can enter the new password to user login</td><td>Sri Sharvin</td><td>Pass</td></tr>
</table>

3.	File Upload	Customer have to booked a room to navigate booking form	Employee's can't upload or edit other employee's files	It will take employee's unique id from database and using section method.	Michael Dass	Pass

Table 4.2.2 Integration Testing Plan (administration's interface)

INTEGRATION TESTING PLAN (ITP) (ADMINISTRATION'S INTERFACE)						
No.	**Test Case Name**	**Test Procedure**	**Precondition**	**Expected Result**	**Tester**	**Result (Pass/Failure)**
1.	Admin Signup	Admin is required to sign up to add new admin	Admin need to sign up in order to login to admin dashboard	Admin username and password from admin signup are used for admin login	Sri Sharvin	Pass
2.	Add Projects	Admin Have to click add button to add projects	Admin can name the project name, set the location and also date.	The output will be displayed at employee's interface	Michael Dass	Pass

5.0 Major Findings and Discussion <u>Advantages</u>

• Able to organize task for employees

Admin can able to organize the task for employees so that the information will be well stored.

• User Friendly

It's a user friendly and easy to employee to navigate to another interface

<u>Disadvantages</u>

   • **Unable to upload photo multiple**

For the project completion prove employee only can upload one photo. If they have to upload two photo so they have to upload it twice.

   • **Not Mobile Friendly**

This Project Management System were not mobile friendly

6.0 Recommendation and Conclusion

Our project is only a humble venture to satisfy the needs to manage their project work. Several user-friendly coding has also been adopted. This package shall prove to be a powerful package in satisfying all the requirements of the school. The objective of software planning is to provide a framework that enables the manager to make reasonable estimates made within a limited time frame at the beginning of the

Web application project and should be updated regularly as the project progresses.

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